Server State of the Union

Session 610

These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

Mac OS X Server

Cheetah
2001

Puma
2001

Jaguar
2002

Panther
2003

Tiger
2005

Leopard
2007

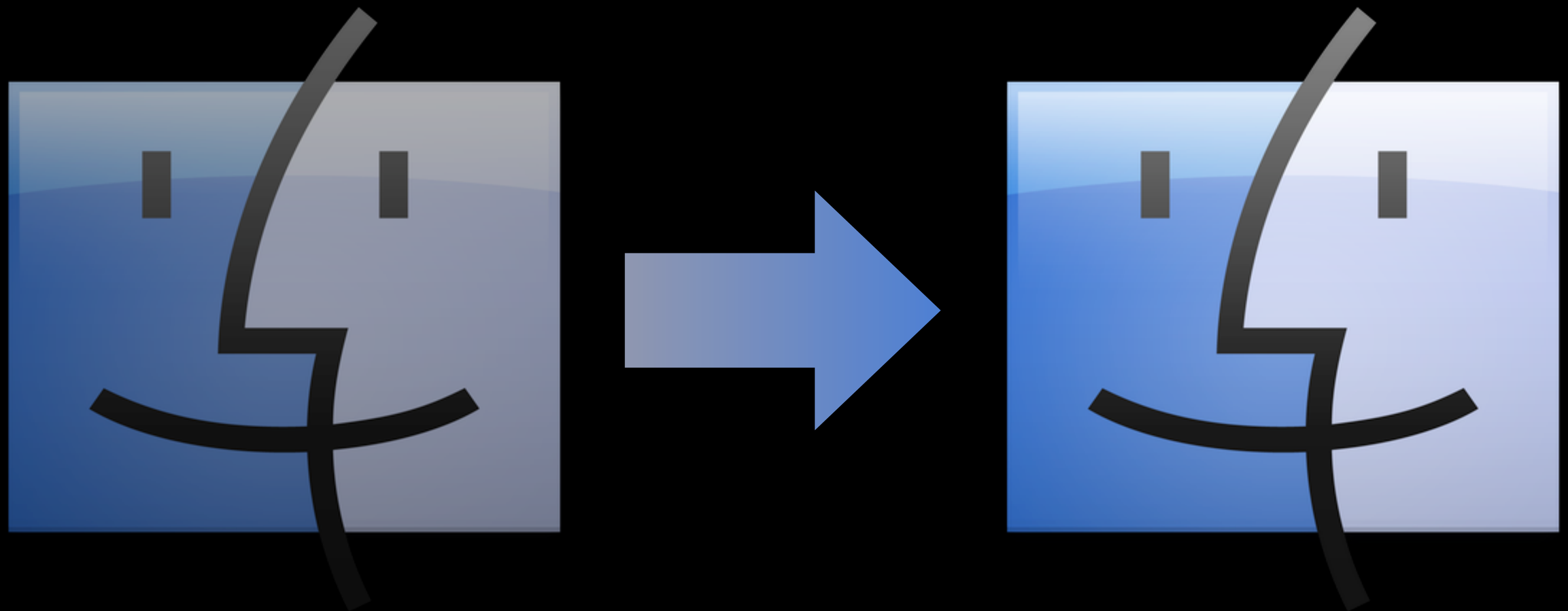
UNIX

Mac OS X Server
Snow Leopard

1.5
2.0
2.5
1.0
3.0
.5
3.5
0
4.0
GHz

Installation and Setup

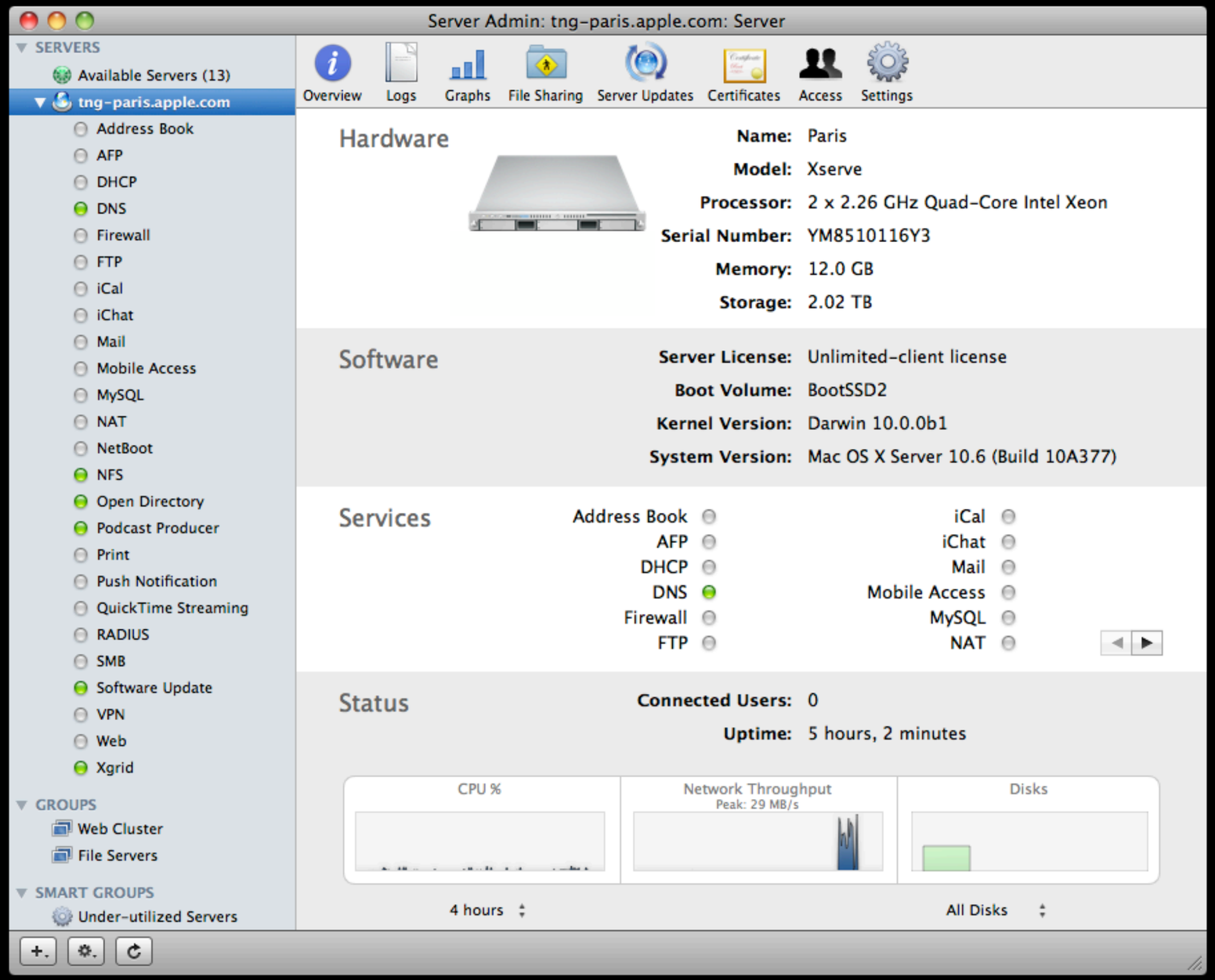
Server Migration



Airport Configuration

Certificate Management

Server Administration



0
1.0
1.5
2.0
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3.0
3.5
4.0
GHz

0
.5
1.0
1.5
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2.5
3.0
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4.0
GHz

64

64-Bit OS

64-Bit OS and Services

Address Space

System Calls

Computation

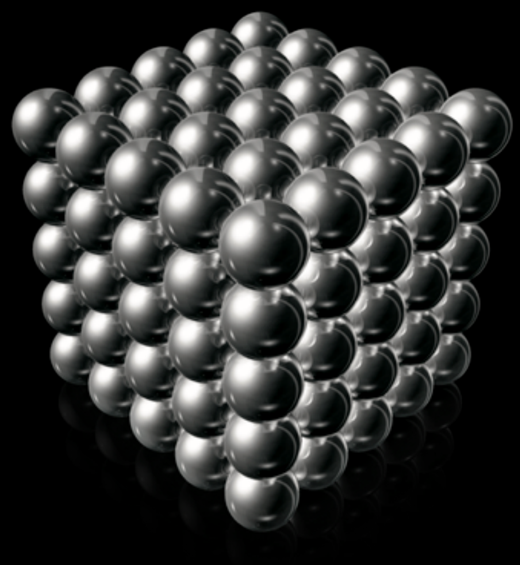
OS Resources

Address Space

System Calls

Computation

OS Resources



Address Space

System Calls

Computation

OS Resources

Address Space

System Calls

Computation

OS Resources

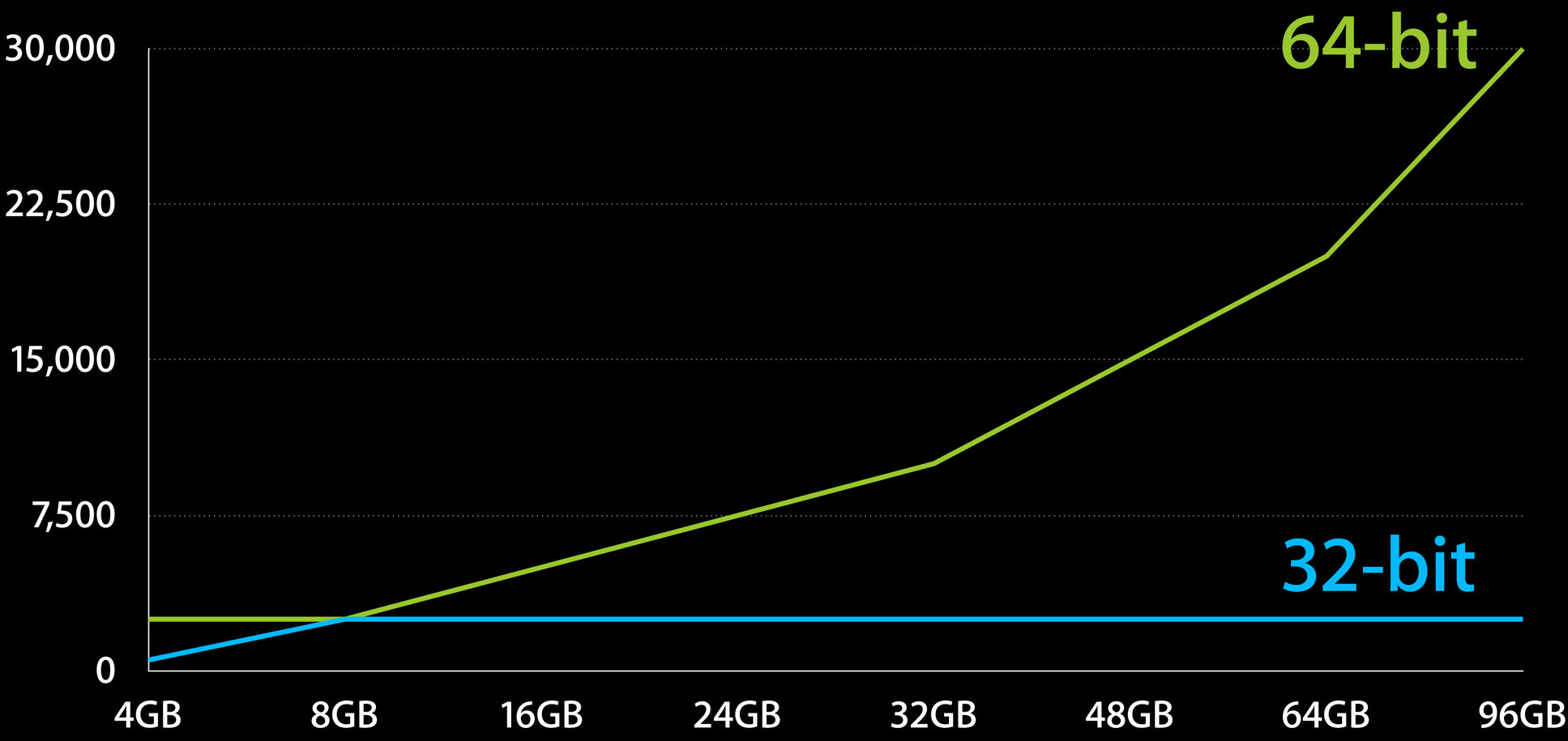
Address Space

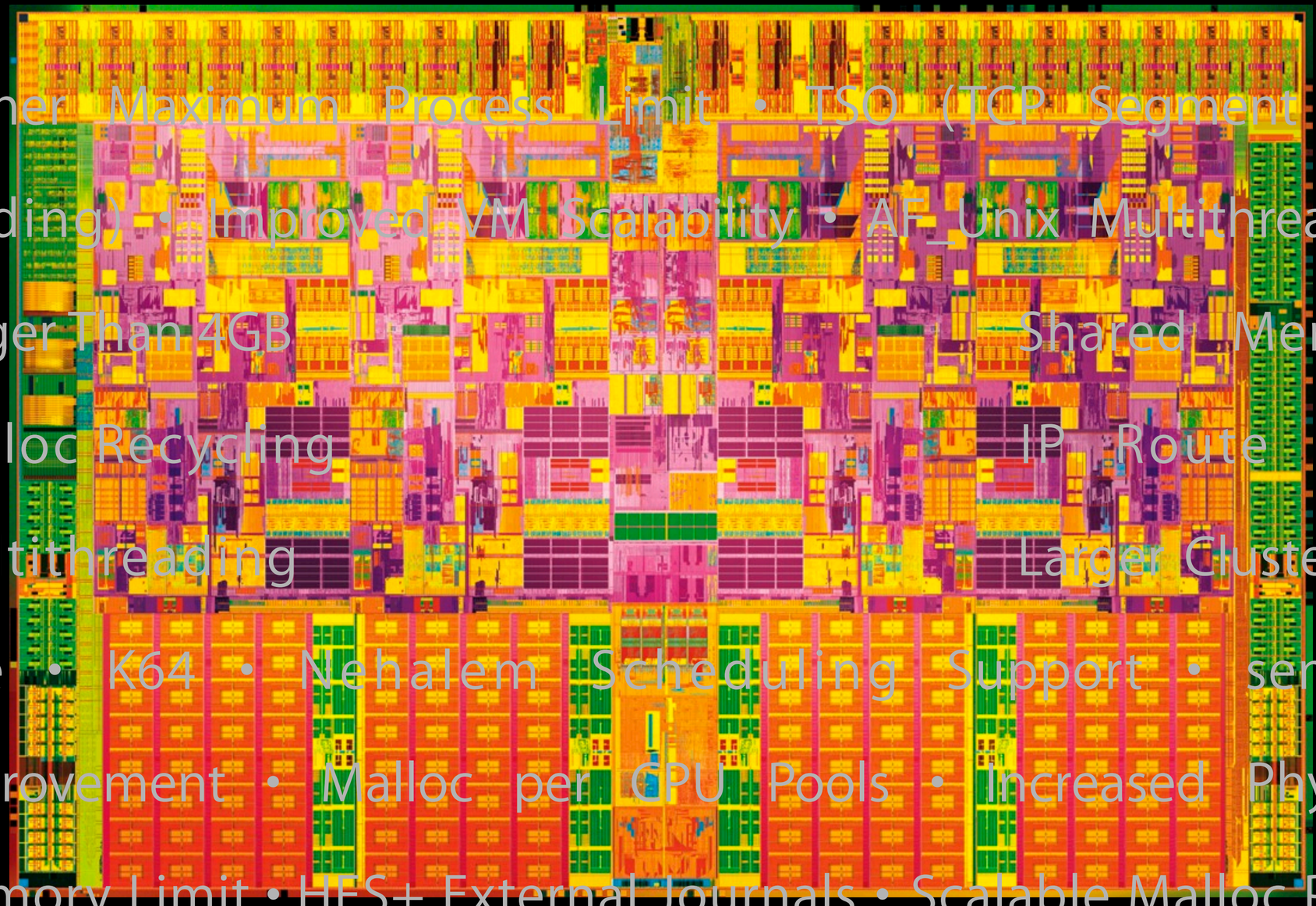
System Calls

Computation

OS Resources

Process Scalability

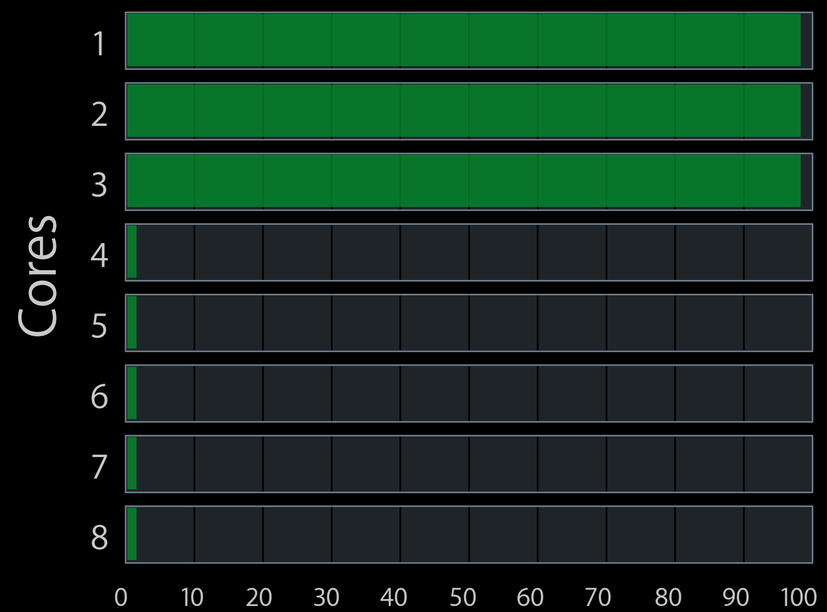




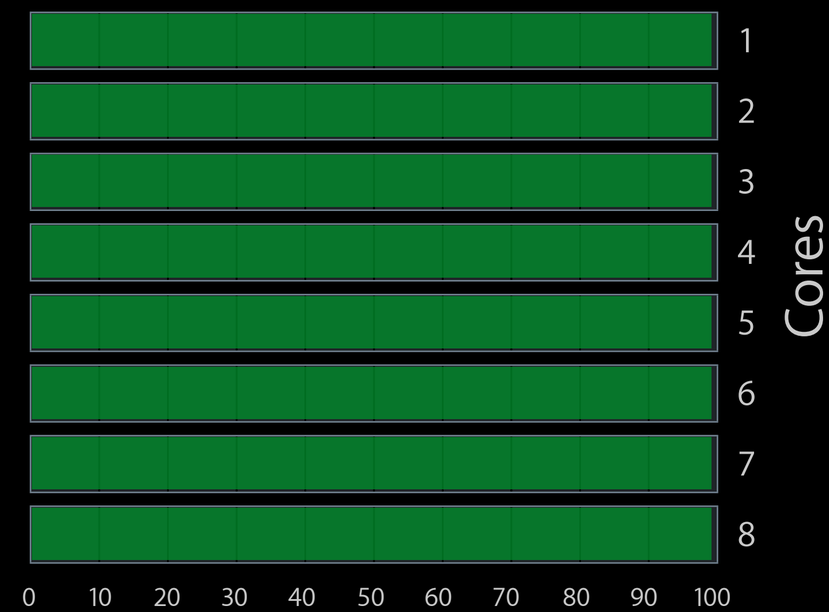
Higher • Maximum Process Limit • TSO (TCP Segment Off-loading) • Improved VM Scalability • AF_Unix Multithreading Larger Than 4GB • Shared Memory Malloc Recycling • IP Route Lock Multithreading • Larger Cluster I/O Size • K64 • Nehalem Scheduling Support • sendfile Improvement • Malloc per CPU Pools • Increased Physical Memory Limit • HFS+ External Journals • Scalable Malloc Pools

Multicore Scalability

Leopard Server

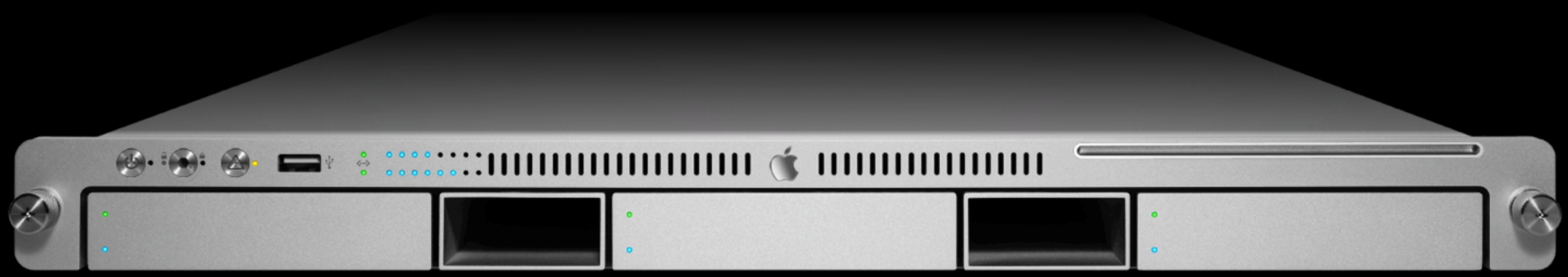


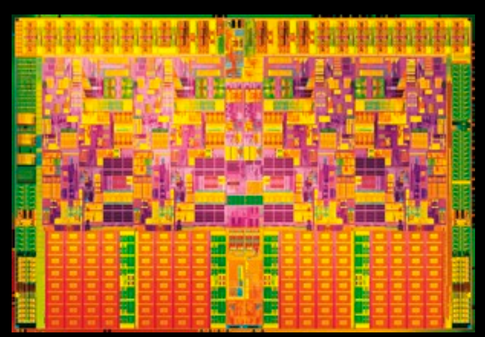
Snow Leopard Server



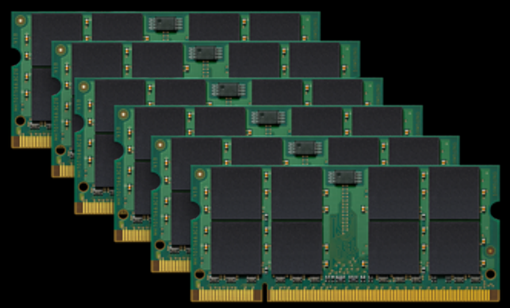
Over 2x Performance

Xserve



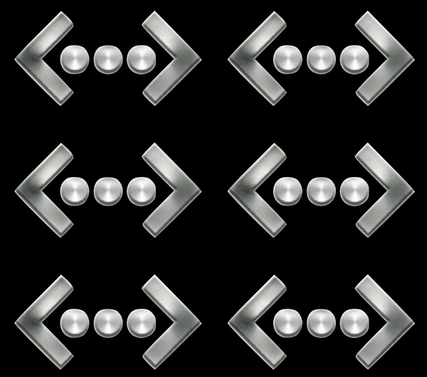


Multicore



48GB RAM

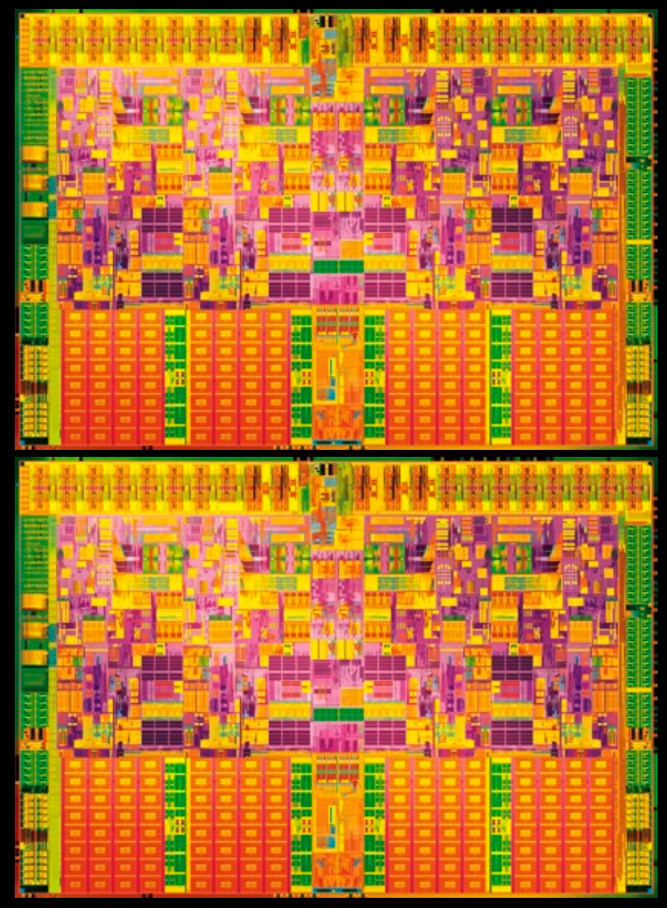
64 SAS Drives



6-port NIC

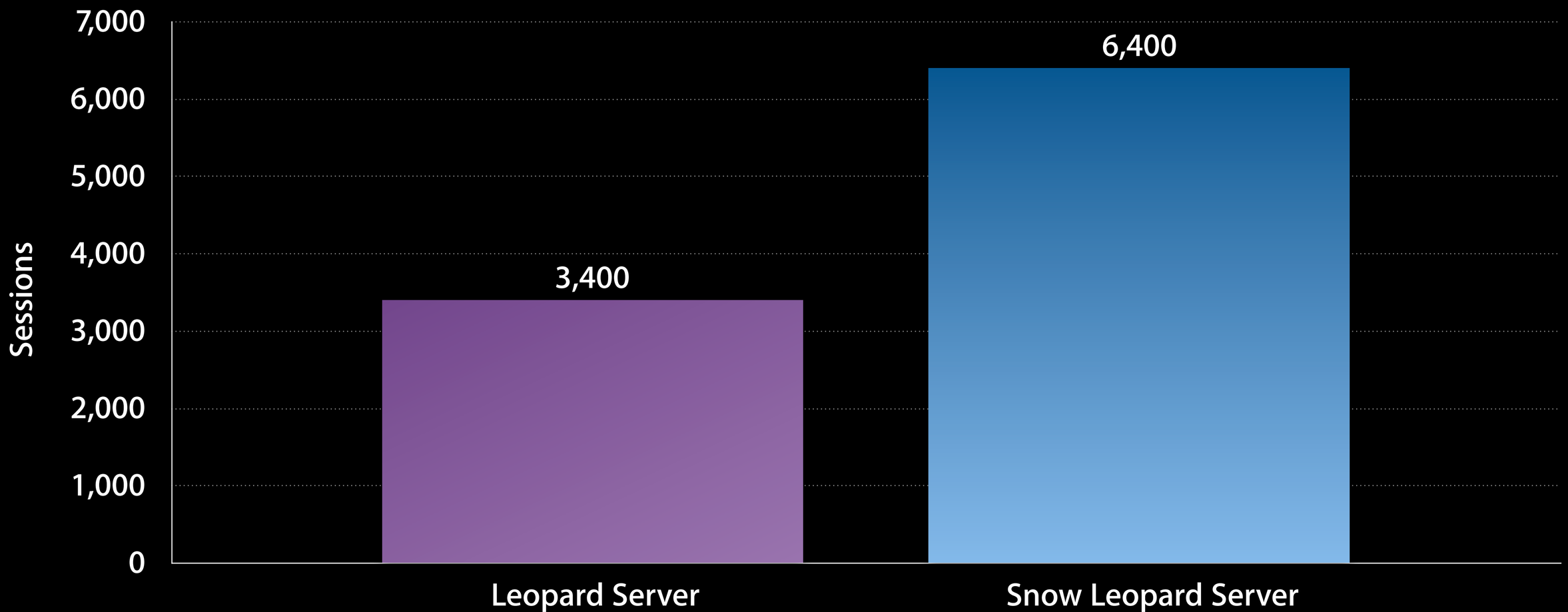
Highly Scalable OS

64



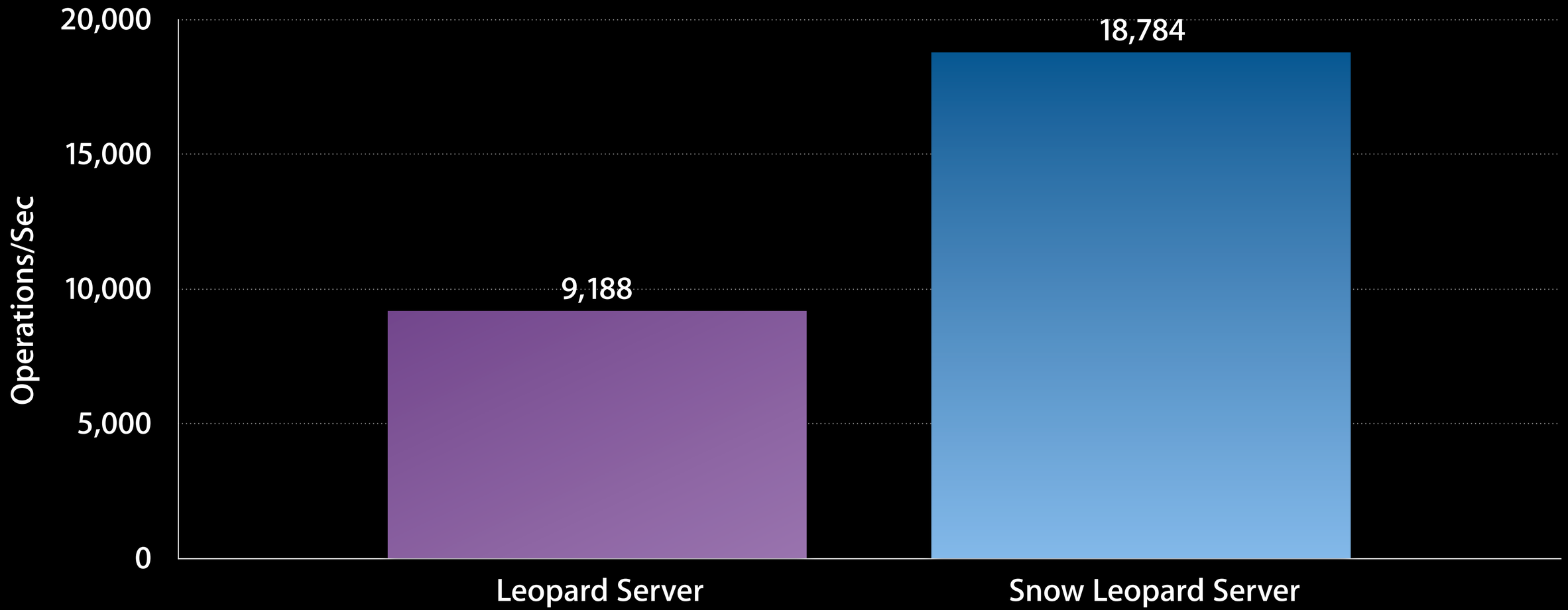
Web Server

1.8x Leopard Server



NFS Server—SPECsfs2008_nfs.v3

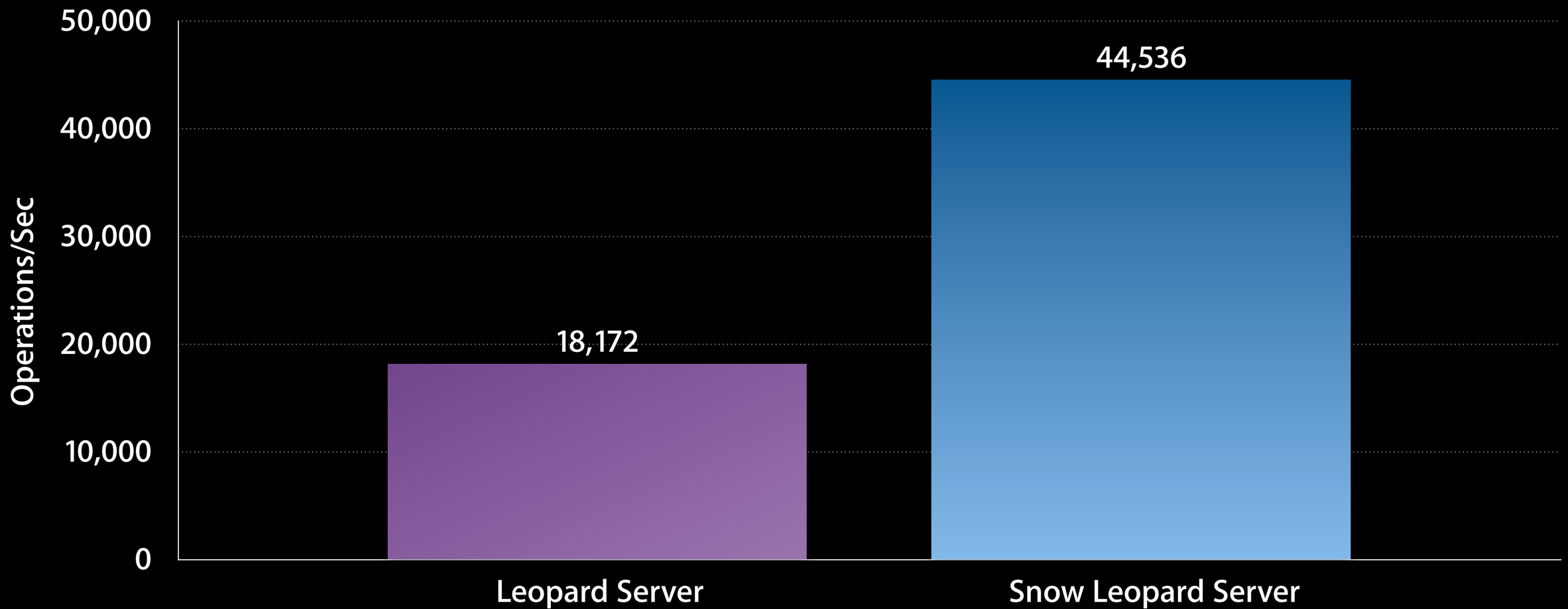
2x Leopard Server



Testing conducted by Apple in May 2009 using a 2.93GHz 8-core Xserve (Early 2009) with 48GB RAM, a 4-port 4-Gbps Fibre Channel adapter, a SmallTree 6-port Gigabit Ethernet adapter, and 4 Promise VTrak E-class RAID arrays, each with 16 300GB 15,000-rpm SAS drives, running a shipping version of Leopard Server v10.5.7 and a prerelease version of Snow Leopard Server. Testing with Leopard Server v10.5.7 reported 9189 SPECsfs2008_nfs.v3 ops per second with an overall response time of 2.18 ms, and testing with Snow Leopard Server reported 18,784 SPECsfs2008_nfs.v3 ops per second with an overall response time of 2.67 ms. SPEC® and the benchmark name SPECsfs2008™ are trademarks of the Standard Performance Evaluation Corporation (SPEC); see www.spec.org for more information. Competitive benchmark results stated here reflect internal Apple testing and were submitted to SPEC in May 2009. Performance tests are conducted using specific computer systems and reflect the approximate performance of Xserve and Mac OS X Server.

SMB Server—SPECsfs2008_cifs

2.3x Leopard Server



Testing conducted by Apple in May 2009 using a 2.93GHz 8-core Xserve (Early 2009) with 48GB RAM, a 4-port 4-Gbps Fibre Channel adapter, a SmallTree 6-port Gigabit Ethernet adapter, and 4 Promise VTrak E-class RAID arrays, each with 16 300GB 15,000-rpm SAS drives, running a shipping version of Leopard Server v10.5.7 and a prerelease version of Snow Leopard Server. Testing with Leopard Server v10.5.7 reported 19,313 SPECsfs2008_cifs ops per second with an overall response time of 1.89 ms, and testing with Snow Leopard Server reported 44,347 SPECsfs2008_cifs ops per second with an overall response time of 1.89 ms. SPEC® and the benchmark name SPECsfs2008™ are trademarks of the Standard Performance Evaluation Corporation (SPEC); see www.spec.org for more information. Competitive benchmark results stated here reflect internal Apple testing and were submitted to SPEC in May 2009. Performance tests are conducted using specific computer systems and reflect the approximate performance of Xserve and Mac OS X Server.

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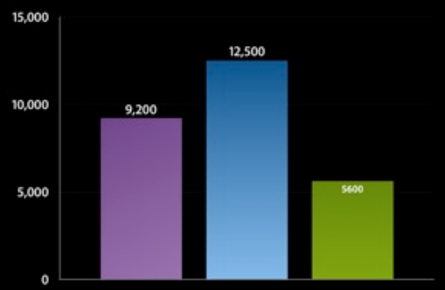
GHz

JUL
17

Mail Server

Brand New Mail Server Engine



Performance

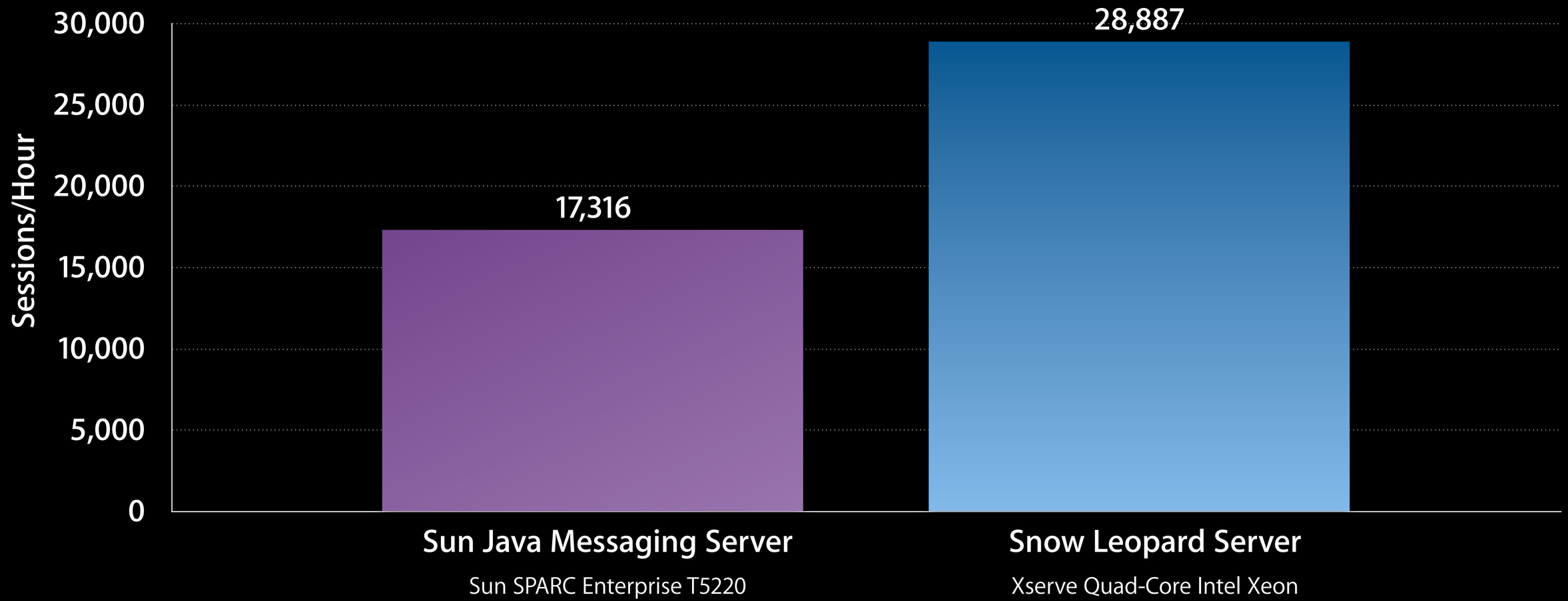
Reliability

Apple Integration

Improved Performance

SPECmail_Ent2009

1.7x Sun Java Messaging Server



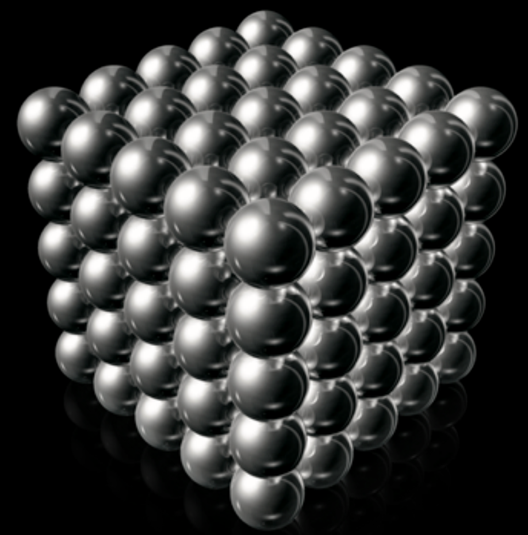
Testing conducted by Apple in May 2009 using a 2.93GHz 8-core Xserve (Early 2009) with 48GB RAM, a 4-port 4-Gbps Fibre Channel adapter, a SmallTree 6-port Gigabit Ethernet adapter, and 5 Promise VTrak E-class RAID arrays, each with 16 300GB 15,000-rpm SAS drives, running a prerelease version of Snow Leopard Server. Apple testing produced results of 28,887 SPECmail_Ent2009 sessions per hour. Testing conducted by Sun Microsystems on a Sun SPARC Enterprise T5220 produced results of 17,316 SPECmail_Ent2009 sessions per hour. SPEC® and the benchmark name SPECmail2009™ are trademarks of the Standard Performance Evaluation Corporation (SPEC); see www.spec.org for more information. For the latest SPECmail2009 results, visit www.spec.org/osg/mail2009. Benchmark results stated here reflect internal Apple and Sun testing and were published on www.spec.org from March 2009 to June 2009. Performance tests are conducted using specific computer systems and reflect the approximate performance of Xserve and Mac OS X Server.

Improved Reliability

ealing

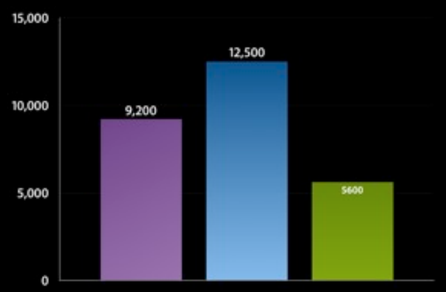
ering

Apple Integration



Mail Server

iChat Server



Performance

Feature Enhancements

Compatible

iChat Server

iCal Server

iCal Server

- Fully featured calendaring and scheduling solution
- Delegate support
- High performance
- Completely standards-based

CalDAV Adoption

Apple iCal Server • Oracle Beehive
Chandler • Yahoo!/Zimbra • Kerio
Sun Java Calendar Server • eM
Client • Google Calendar
Evolution • Kronolith Mozilla
Lightning • Mulberry
OpenConnector • ZideOne • SOHO
Organizer • RemoteCalendar
Bedework • DAVical • Dingo
Calendar Server • EGroupware
ModCalDAV • ScalableOGo • Scalix

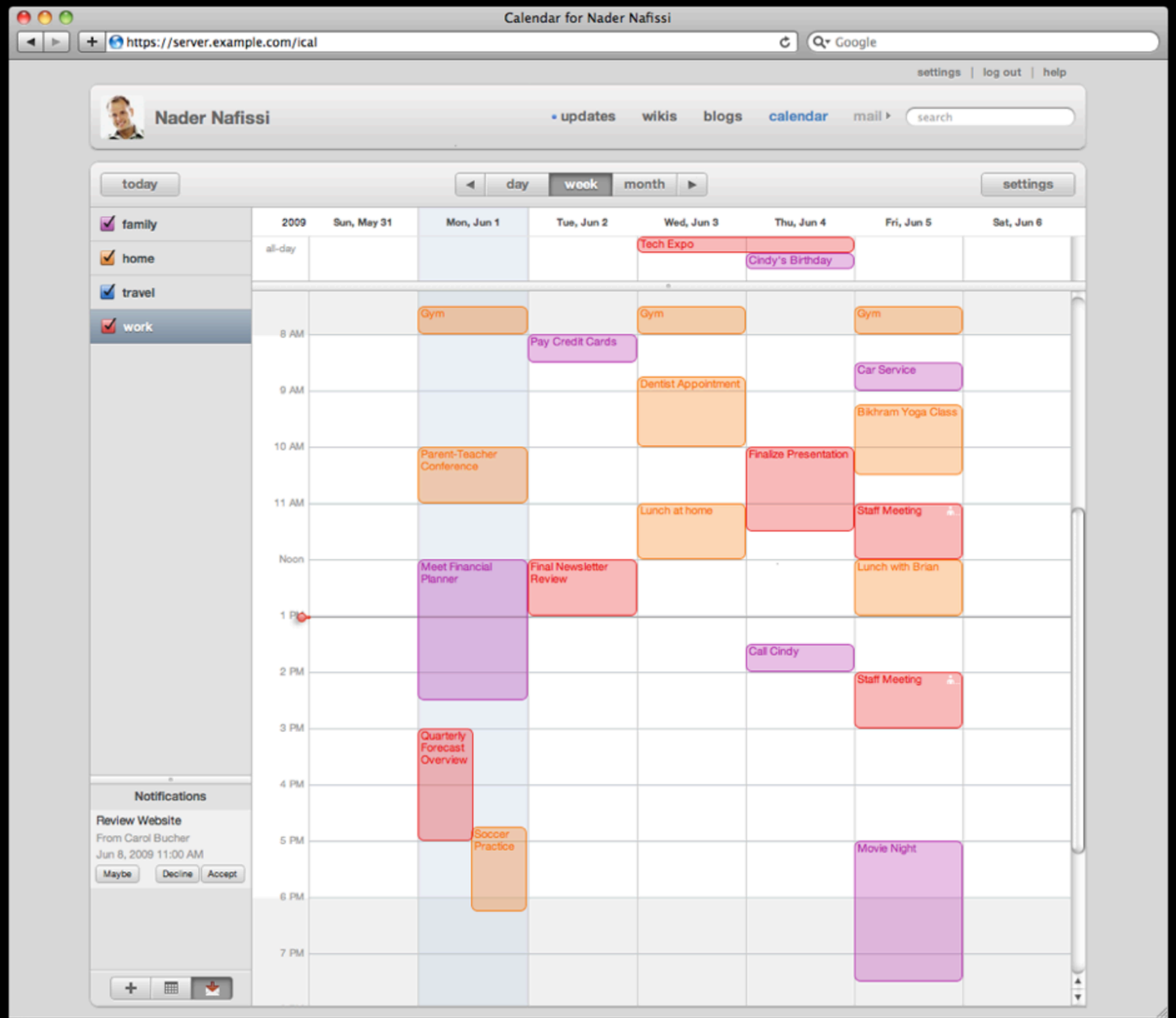
iCal Server

New

Protocol Updates

- Implicit scheduling
- Push notifications
- Attendee lookups via CalDAV
- Comment to organizer

Web Client


Calendar for Nader Nafissi
https://server.example.com/ical
Google
settings | log out | help
Nader Nafissi
updates
wikis
blogs
calendar
mail
search
today
day
week
month
settings
family
home
travel
work
2009
Sun, May 31
Mon, Jun 1
Tue, Jun 2
Wed, Jun 3
Thu, Jun 4
Fri, Jun 5
Sat, Jun 6
all-day
Tech Expo
Cindy's Birthday
8 AM
9 AM
10 AM
11 AM
Noon
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
Gym
Pay Credit Cards
Dentist Appointment
Car Service
Bikhram Yoga Class
Parent-Teacher Conference
Finalize Presentation
Lunch at home
Staff Meeting
Meet Financial Planner
Final Newsletter Review
Lunch with Brian
Call Cindy
Staff Meeting
Quarterly Forecast Overview
Soccer Practice
Movie Night
Notifications
Review Website
From Carol Bucher
Jun 8, 2009 11:00 AM
Maybe
Decline
Accept

Enhanced Interoperability

Google™ Calendar BETA

YAHOO! Calendar

Performance

Demo

Calendar Server

Wilfredo Sanchez Vega
Mac OS X Server Engineering

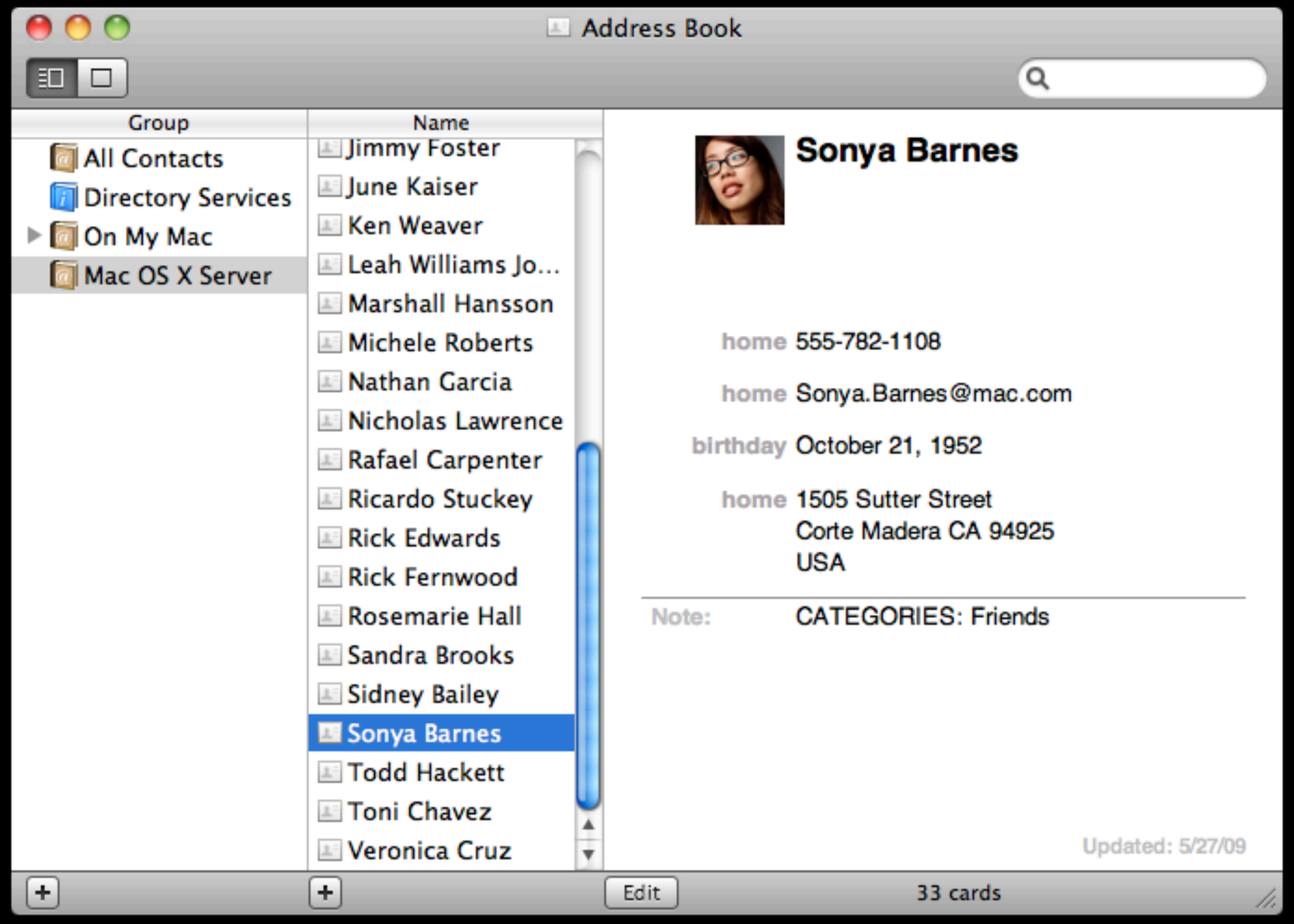
iCal Server

Address Book Server

Standards Based

CardDAV

Client Support



Global Address Book

Address Book Server

JUL
17

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4.0
GHz

Web Collaboration

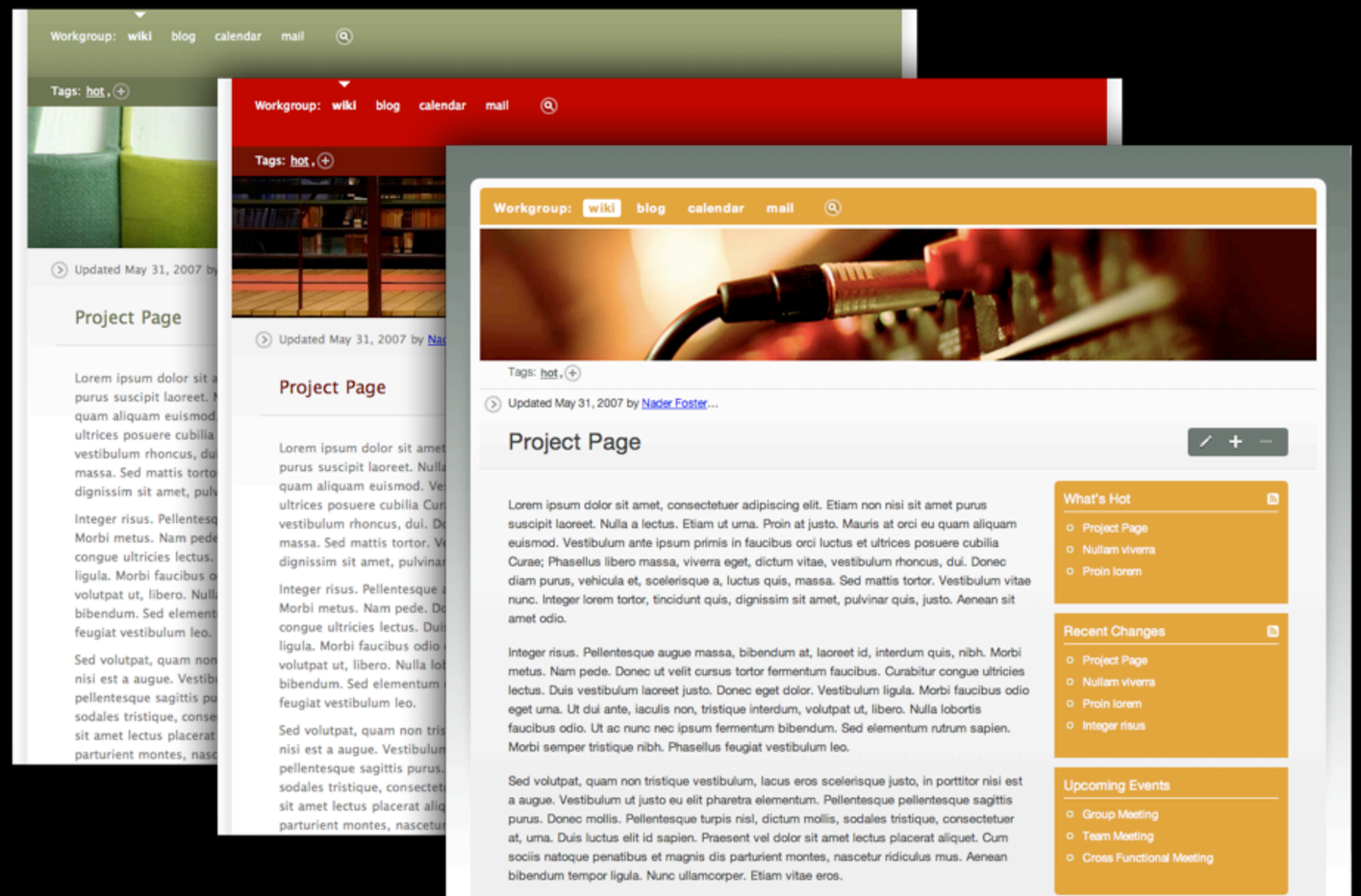
Web Collaboration

- Easy web collaboration
- WYSIWYG editing
- Group wikis
- Group blogs
- Group calendars
- Group mailing lists

Web Collaboration

New

Even Simpler Wiki Creation



My Page

My Page
Lorem Ipsum
Ut Enim Ad Minim
Qui Ratione
Quis Autem
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor

Cross-Wiki Searching

Quick Look in the Browser

New Customization Hooks

Optimized for iPhone

Demo

Wiki Server

John Anderson
Mac OS X Server Engineering

Web Collaboration

Standards and APIs

HTTP

XML-RPC

RSS

XSLT

CalDAV

iCalendar

IMAP

POP

SMTP

iMIP

XMPP

CardDAV

vCard

Web APIs

Calendar APIs

Mobile Access Server

Mobile Access Server

- Remote access to services on your intranet
- Strong encryption and authorization
- No special client software required
- Works on any client OS

0
.5
1.0
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2.5
3.0
3.5
4.0
GHz

Podcast Producer

What's Podcast Producer?

Complete End-to-End Solution

What's Podcast Producer?

Amazing Simplicity

A Great Success

STANFORD SCHOOL OF MEDICINE

Harper College

MACAULAY HONORS COLLEGE AT CUNY

LEHMAN COLLEGE

Stenden hogeschool

UIC University of Illinois at Chicago

WIRTSCHAFTS UNIVERSITÄT WIEN

NEW YORK UNIVERSITY COLLEGE OF DENTISTRY

SURF NET

USC

ANU THE AUSTRALIAN NATIONAL UNIVERSITY

JOHNS HOPKINS MEDICINE

UCL

TECHNISCHE UNIVERSITÄT MÜNCHEN

Columbia COLLEGE CHICAGO

GUSTAVUS GUSTAVUS ADOLPHUS COLLEGE

The City University of New York CUNY GRADUATE SCHOOL OF JOURNALISM

New York University College of Dentistry

Elise S. Eisenberg, DDS, MA
Director of Informatics and Digital Support Services

New York University College of Dentistry

- Third oldest and the largest dental school in the U.S.
- Educating more than 8 percent of all dentists in the U.S.
- Significant global reach
- Provides a level of national and international diversity among its students that is unmatched by any other dental school

Office of Informatics

- Student and faculty multimedia and technical support
- Website front- and back-end development
- Classroom and clinical AV support
- Podcast Producer/iTunes U

Why Lecture Recording?

- Central location for archiving recordings
- Ability for faculty to listen to recordings
- Availability of recordings for students away on outreach and rotations
- A more interactive learning experience
- Best solution + lowest cost = Podcast Producer (September 2008)

Podcasting

iTunes U network setup at NYUCD

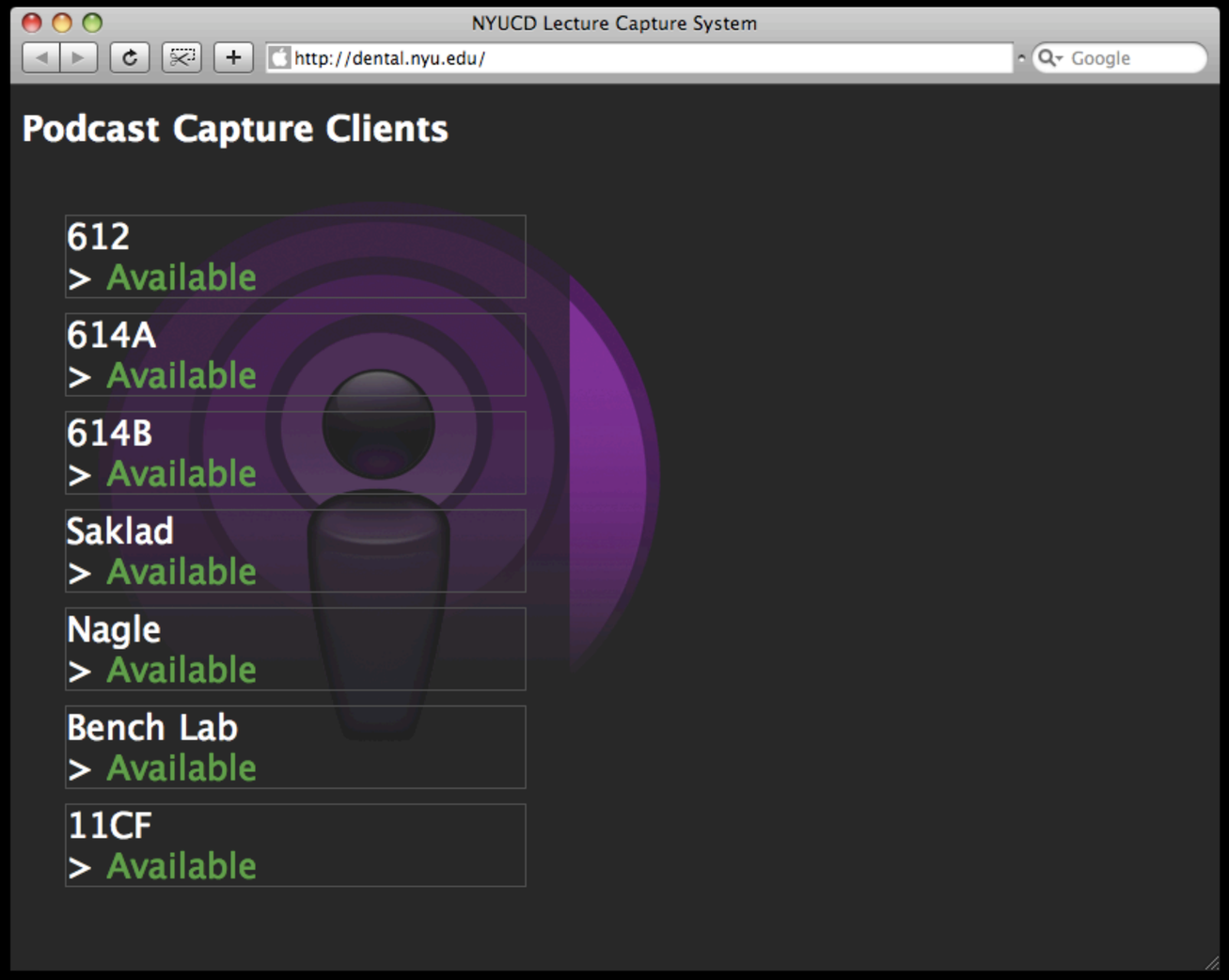
Issues We Needed to Address

- Security of the Mac Minis
- How do we start and stop the recordings?
  - Camera binding
  - Keyboard? iPod Touch (VNC)? Web interface?

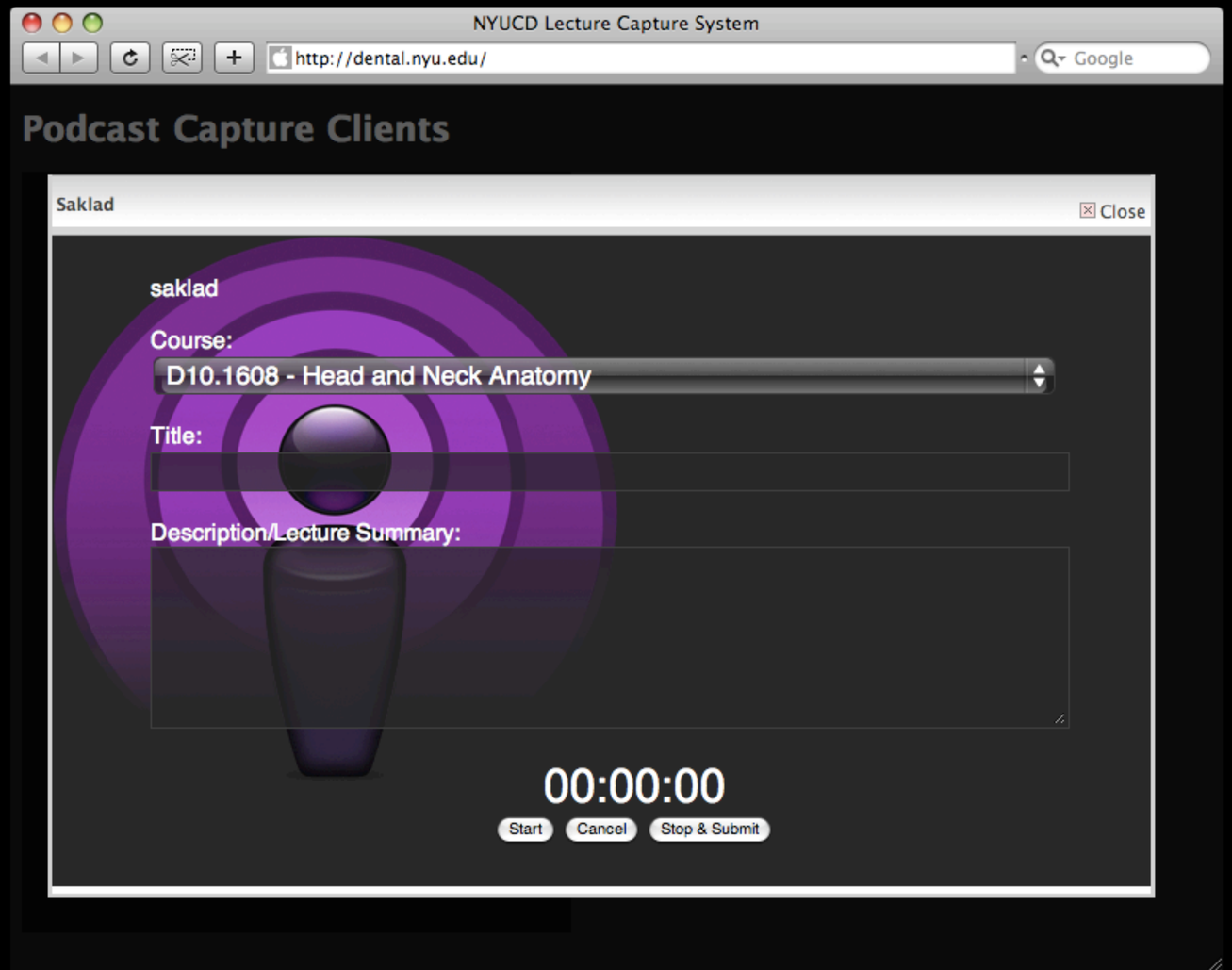
Decisions We Made

- Student control—“Student Podcast Service”
- Built our own web interface

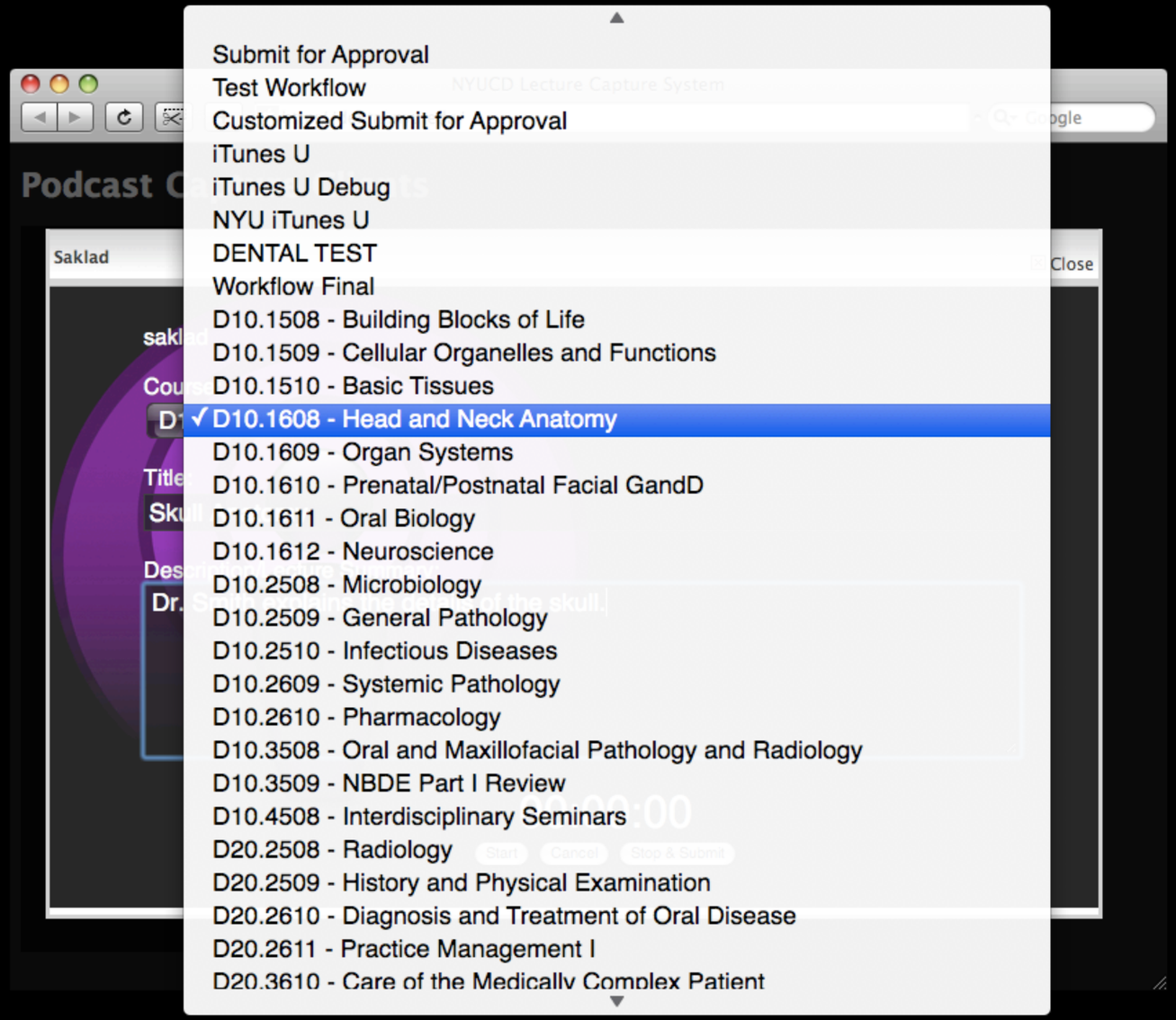
Web Interface



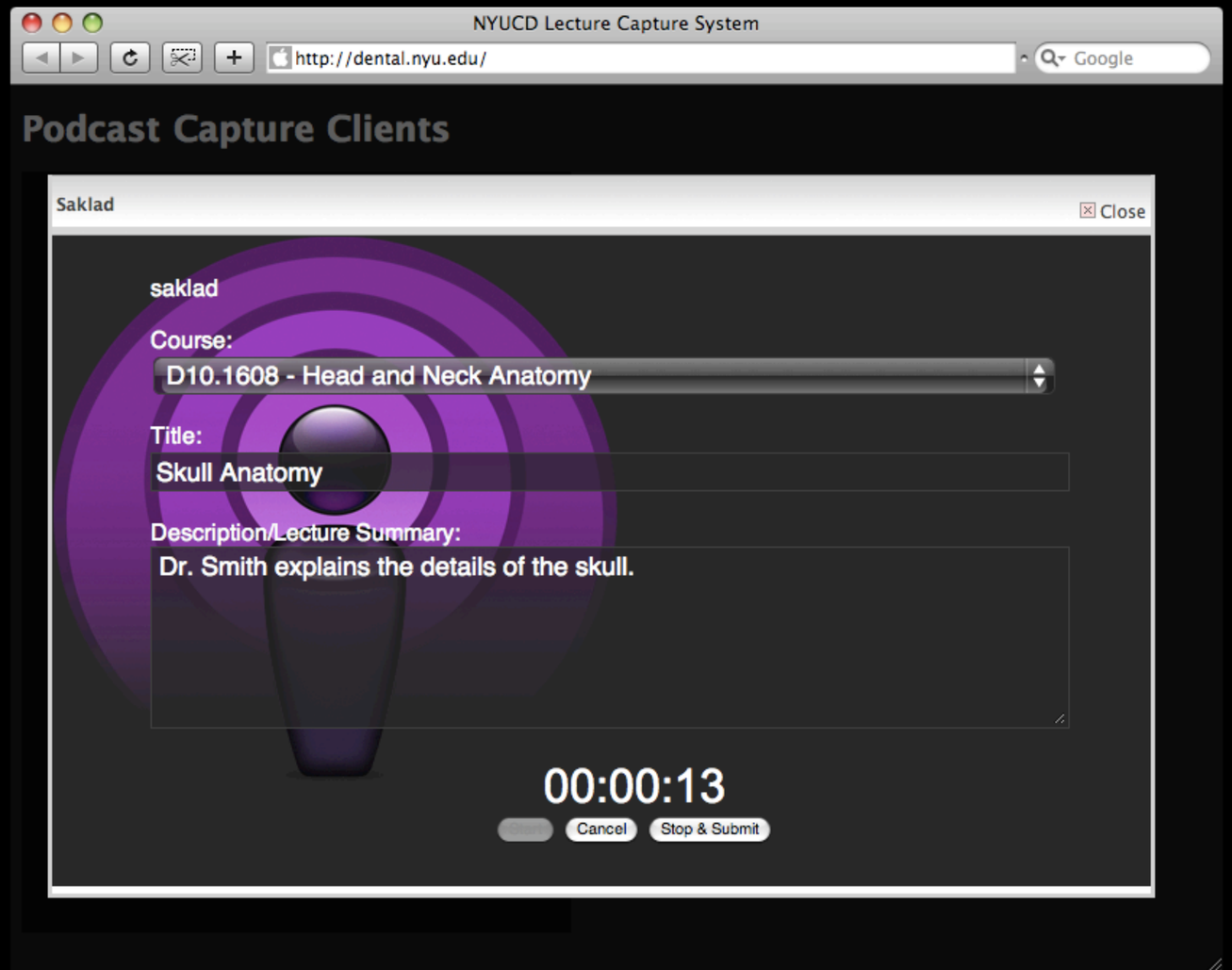
Web Interface



Web Interface



Web Interface

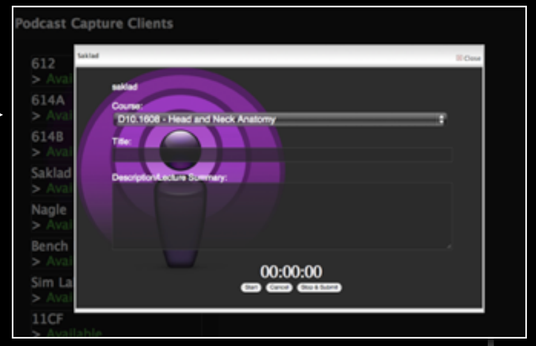


Podcasting

iTunes U workflow setup at NYUCD

Students

Website (Server)



Mac Mini Control Page

iTunes U

Mac Mini

Mac OS X Server

Internet

Faculty

AV Rack

ALEX (Sakai)

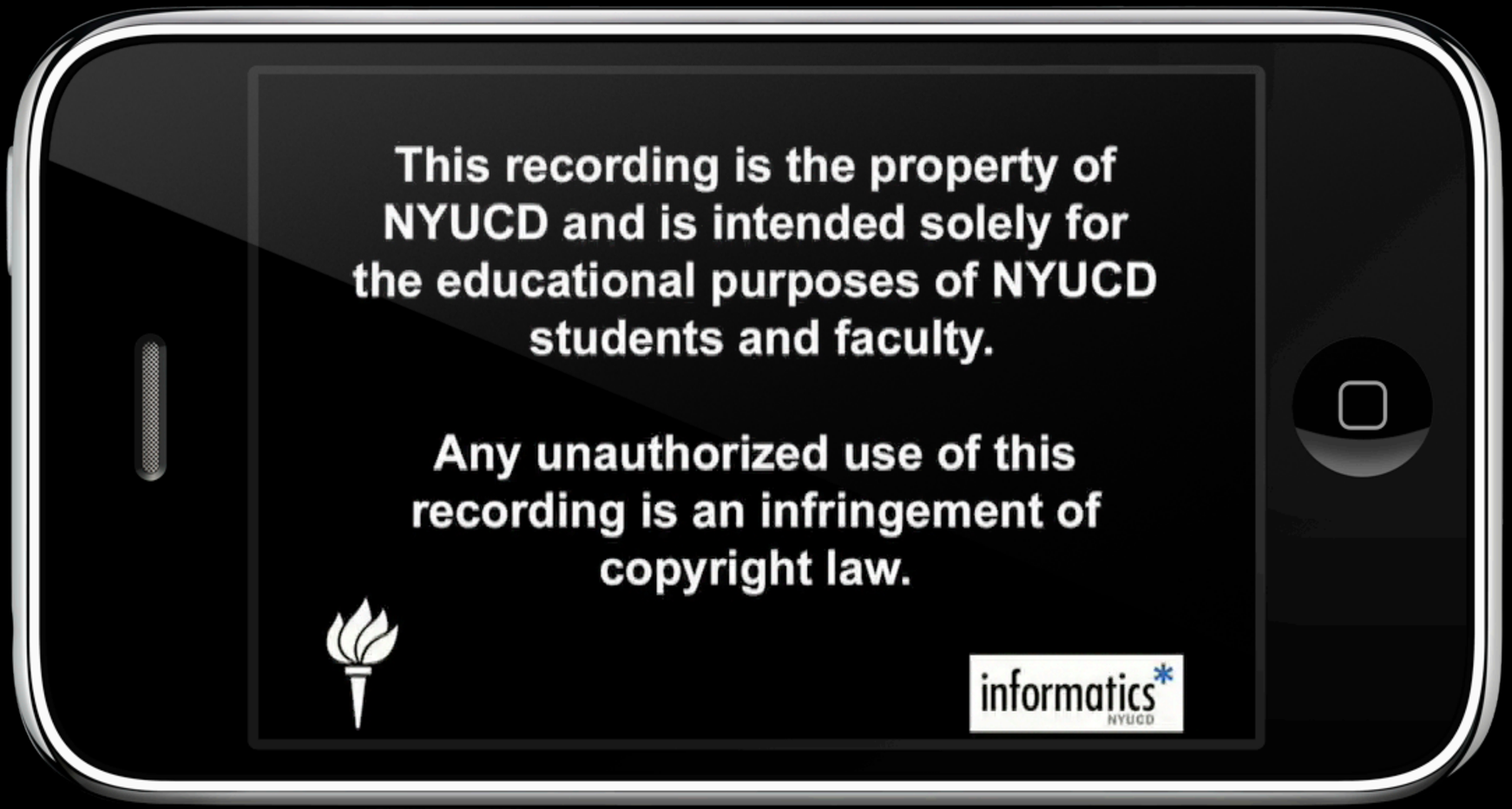
Where We Are

- September 2008: Audio recording using Podcast Producer
- March 2009: Video (slides) available
  - Audio turnaround time remains the same: 30–60 minutes
  - Video turnaround time: 1–2 hours after the lecture

- Over 4,000 files uploaded
- Over 160,000 downloads

Lessons Learned

- Need to learn Podcast Producer
- DIY—taught us a lot
- Love Apple Remote Desktop!
- Great relationship between IT and AV
- Buy in from faculty and administration/training


This recording is the property of NYUCD and is intended solely for the educational purposes of NYUCD students and faculty.
Any unauthorized use of this recording is an infringement of copyright law.
informatics
NYUCD

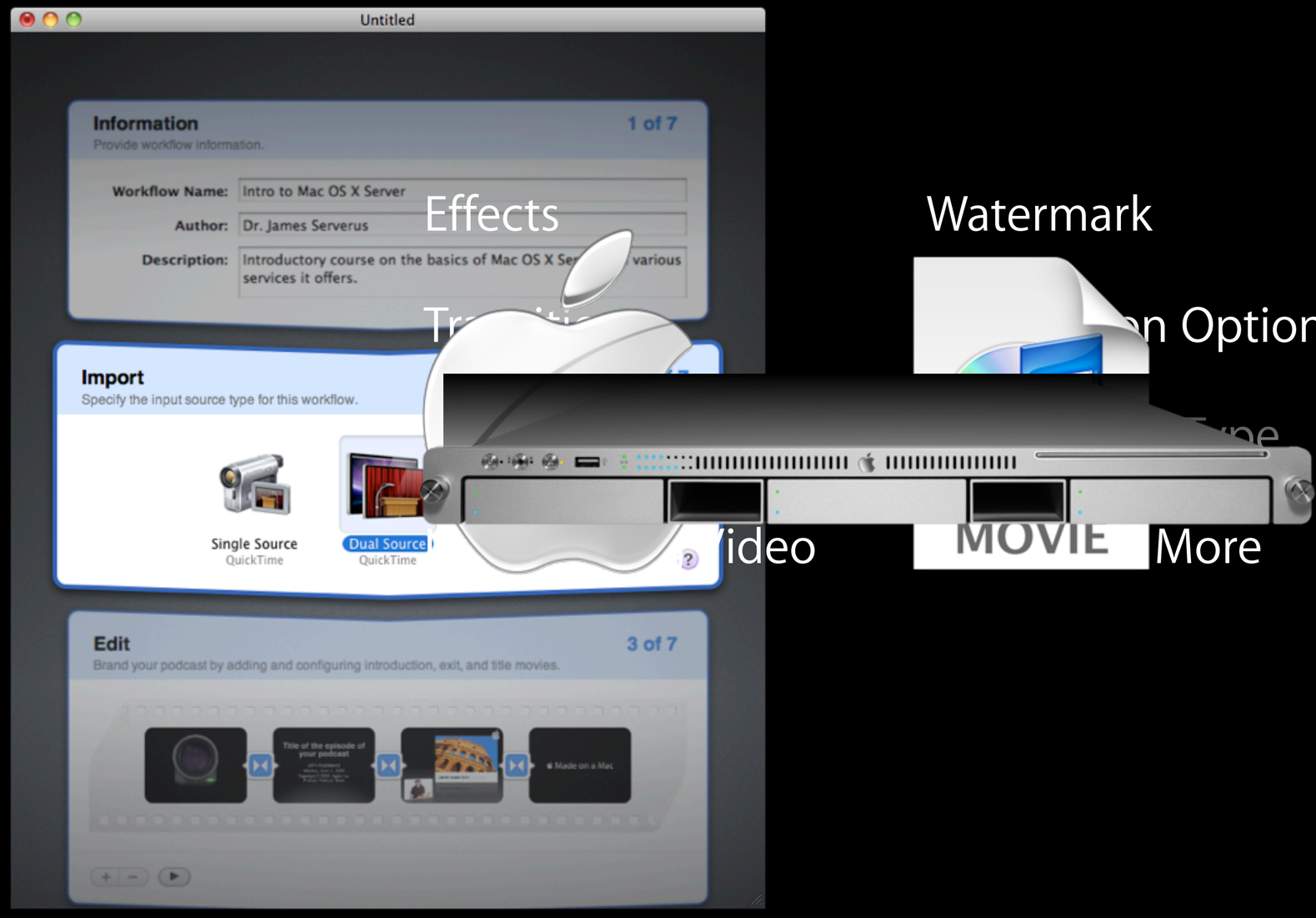
Podcast Producer 2

Dual-Source Video

Capture Applications

Podcast Composer

Deploy workflow directly

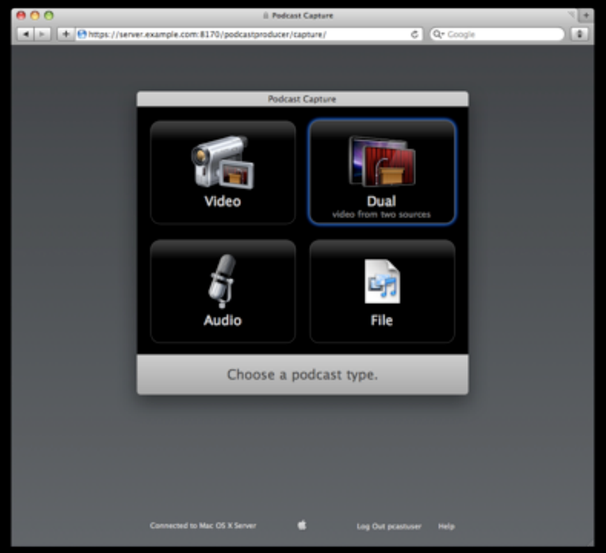


Demo

Kjell Bronder
Podcast Producer Engineering

Podcast Library

Built-Ay ATOM/RSS delivery engine


Podcast Capture
https://server.example.com:8170/podcastproducer/capture/
Google
Podcast Capture
Video
Dual
video from two sources
Audio
File
Choose a podcast type.
Connected to Mac OS X Server
Log Out pcastuser
Help

Final Cut Studio 2
Tools for real-time video and audio production
Final Cut Server
Professional workflow and digital asset management

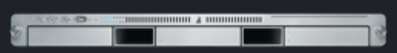
Open and Modular Architecture

Podcast Capture

Workflow
Processing Grid

Podcast Composer

“podcast” CLI Tool



Podcast Producer
Server

Podcast Library

Snow gies

Undern ucer 2

QuickTime X

Quartz Composer

Core Animation

OpenGL

Podcast Producer

Snow Leopard Server

September

$499

Unlimited Clients

Mac OS X Server
Snow Leopard

WWDC09